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Patent Office Canberra

I, JANENE PEISKER, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004902736 for a patent by FRANK DANIEL LOTRIONTE as filed on 18 March 2004.



WITNESS my hand this Fourteenth day of April 2005

JANENE PEISKER

TEAM LEADER EXAMINATION

SUPPORT AND SALES

AUSTRALIA Patents act 1990

COMPLETE SPECIFICATION INNOVATION PATENT

IMPROVED FAN

The following statement is a full description of this invention , including the best method of performing it known to me :

IMPROVED FAN

Technical Category:

Mechanical, Electrical and electronics.

This invention aims at supplying the required air flow and /or pressure differential for various applications including cooling, ventilation, light aircraft / hover craft propulsion etc. from a reduced product size and / or available input power requirement with a specially designed fan that maximizers the conversion of torque into airflow, by means of concentrating most of the work done (where it is of maximum efficiency) at its circumference, as well as by combining the total effects of an axial vane type fan, a helically pitched blade type fan and a centrifugal fan, all working in conjunction, to create air or gas flow in and though it.

DESCRIPTION

A number of curved section, longitudally orientated "vanes" #1 with a pronounced longitudal twist or "helix" protruding mainly toward the rotation direction #2, rotatably fixed parallel to the axial centerline and inward air flow direction, fixed to the outer "frontward" ends of an equal number of outwardly projecting blades containing a slight increasing surface curvature in both their outer horizontal and vertical planes #3 thus permitting full co - joining at their respective junctions, see Figure 1, are centrally connected and radially displaced around a central hub or shaft. #4

The impellor is constucted in such a way to allow cavity mouldablity in plastics or forming in sheetmetal, aluminium, either as one complete unit or to be assembled in sections.

ABSTRACT:

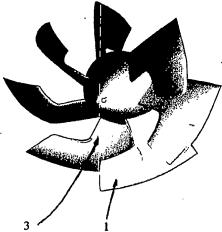
This invention essentially comprises of a conjunction / co-operation of a multi - bladed fan or propellor with a forward projecting vane type fan that operates both as a centrifugal vane type fan as well as a extension of the working area at the outer edge of the multi-bladed fan providing the maximum efficiency possible in a given working diameter (to reduce sinertia and required input power) and consists of a number of individual outwardly projecting thin, slightly curved surfaces (blades) inclined at approximately 50 degrees to the inward air flow, that have at their respective outer, most frontward edges, a typically curved section substancially forward projecting extension, twisted or slanted in a slight helix angle similar but slightly less than the inclination angle of the blades they are joined to, all being radially displaced and attached to a central hub rotating perpendicular to the airflow direction.

The claims defining the invention are as follows:

- A fan or propellor that consists of a number of "vanes" with a curved section spanning approximately 45 80 degrees, with a pronounced longitudal twist or "helix" of approximately 55 degrees to the axial centerline of the complete assembly, and toward the rotation direction, rotatably positioned in a circular pattern, parallel and equi-distant from the axial centerline and inward air flow direction, protruding from the outer "frontward" ends of an equal number of outwardly projecting blades containing a slight increasing surface curvature in both their outer horizontal and vertical planes and inclined at an approach angle slightly less than the twist or "helix" angle to the inward airflow, thus permitting co-joining at their respective junctions, are all radially displaced and centrally connected to a central hub or shaft.
- A fan or propellor as claimed in claim 1 that has leading and trailing edges as well as inner and outer tips
 of the blades and vanes radiused and sharpened to reduced wind resistance, turbulence and drag.
- 3. A fan or propellor that is moulded in rigid plastics or manufactured in cavity moulds or formed in cast, forged, pressed sheet metal or aluminium either as one unit or as assembled from individual components by riveting, bolting, welding etc.
- A fan or propellor as herein before described with references to Figures 1 -4 of the accompaning drawings.

IMPROVED FAN

Frank Lotrionte 16-3-2004



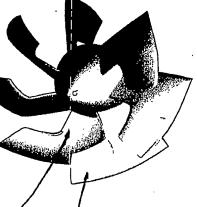




Fig 1

Fig 2 (top view)

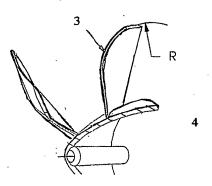
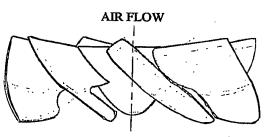


Fig 4 (section A-A view of blade)



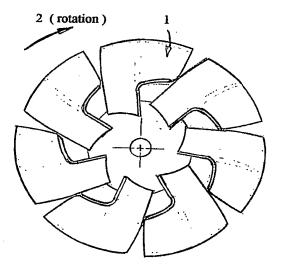


Fig 3 (front view)